

<sup>31</sup>Harris, [xii]. The mercurial ointment, which "may be had at the Apothecaries . . . one Ounce is sufficient for twenty Drawers", was commonly mentioned in the dispensaries of the eighteenth and nineteenth centuries. For those dissatisfied with naphthalene or paradichlorobenzene, the formula follows from *The Dispensary of the Royal College of Physicians, London* (London, 1746), p. 366: "Take of tried hog's lard two pounds, of quicksilver [metallic mercury] one pound, of the simple balsam of sulphur [sulphur boiled lengthily with an essential oil] half an ounce. Rub the quicksilver with the balsam of sulphur, till the quicksilver no longer appears [as a metallic substance]: then add by degrees the lard warmed, and diligently mix them". Turpentine can be used instead of balsam of sulphur, and the yield is enough to prepare forty-eight twenty-drawer cabinets.

<sup>32</sup>There was a second issue of the first edition *ca.* 1773. The second edition appeared in 1778, with a second issue in the same year and a third *ca.* 1814. In 1794 a third edition was produced, with a second issue in the same year. The fourth edition, with additional material by J. O. Westwood, appeared in 1840, following advance copies in 1839; see Lisney for details.

## Some Aspects of the Fauna of the Sahara

By J. L. CLOUDSLEY-THOMPSON

During June and July 1967, accompanied by Mr. and Mrs. Robin Thelwall in a Land Rover, my wife and I drove across the Sahara in an Autounion (D.K.W) "Munga 4," along the Route du Hoggar, on our way from London to Khartoum. Our original intention had been to drive along the North African coast, but the Israeli war put a stop to that. Although shortage of time precluded lengthy halts and most of the daylight hours were spent in driving, the following observations may be of interest, not only to biologists who have had an opportunity of visiting this fascinating region of Africa, but to others who may intend to do so—especially as we found it almost impossible, before our departure, to obtain any information about the route which could aid us in our preparations. Knowledge of the problems we encountered may enable others to be better prepared for similar eventualities. Naturally we expected some difficulties, but not such unpleasantness from officials in ex-French territories. Nor, of course, would anyone have hoped for such kindness as we experienced in Nigeria and Sudan.

We drove through France and Spain via Barcelona, to Algeciras where we took the ferry to Ceuta. Thence we went through *Eucalyptus* groves and grassy plains to Rabat where we turned east through green glades and forests of cork oak, with cryptic jumping-spiders (Salticidae) on the bark, numerous wolf-spiders (Lycosidae) on the sandy soil beneath the trees and clumps of pine with cicadas singing in the branches. At Fez we saw snake-charmers, who appeared to treat their defanged serpents in an unnecessarily rough and brutal way, groups of dancers and various side-shows in the *sùk*. East of Taza we entered a high plain, much overgrazed, mostly by sheep, and dissected everywhere with gully erosion; egrets and storks were numerous. Most of the low hills were dominated by ruined stone forts. Then to Sidi-bel-Abbès, a modern French-style town and Frennda, where the country-side consisted of rolling hills and wide plains. South of Tiaret we saw the first sandgrouse and camels. The latter were dark brown in colour and shorter in the leg

than those of the desert further south. Later, we reached a region of wheat plantations with many insects and spiders, and large, fast-moving woodlice.

Before and after Laghouât, we crossed a high, arid plain dotted with clumps of grass and flat-topped *jebels*. The country became increasingly arid and the vegetation more scanty, with grass tufts confined to hollows and *wadi* beds. The *jebels* became steadily more and more numerous and showed evidence of considerable wind-erosion. The road then crossed the charming oasis of Bériane, after which the landscape with its limestone *jebels* was so much dissected by erosion that it appeared quite lunar. The fine, tarmac road, lined by electricity pylons, continued on through Ghardaia to el Goléa. The countryside became even more arid and sandy, with limited vegetation restricted to hollows; but there were never less than two clumps of grass in view at any one moment. Long serpents of sand were continually blowing across the road and we caught distant glimpses of the Grand Erg Occidental.

At the oasis of el Goléa where police formalities delayed us for nearly a day, insects were plentiful — especially tabanid and muscid flies—and ticks (*Hyalomma* spp.), and we saw a boy with a fennec fox. Here the tarmac road surface ended and the next stretch, across the Plateau de Tademout to In Salah, was extremely rocky and uneven. In fact, we found it the worst of the whole journey. Moreover, not only did we have one of our many punctures and trouble with the sparking plugs, but the air-filter bracket cracked and this fractured all the fan-blades; the engine boiled with a following wind and the radiator hose burst, so we lost a lot of water. I saw a muscid fly about 10 miles south of the derelict Fort Mirabel, a lizard and some camels. At dusk we dropped down a most spectacular, barren escarpment and through an awe-inspiring gorge, reminding us of those in the Simien Mountains of Ethiopia, below which vegetation again made its appearance.

The track to In Salah was now very sandy, with many drifts that might have been difficult to negotiate without four-wheel drive. The soft sand extended from about 50 miles north of In Salah to 40 miles south. We reached the town itself in a sand blizzard. This was no mere storm of fine dust, but big particles that stung the face, caused drifts several metres deep on the roads and restricted visibility like a snow storm. Petrol was available but not again until Tamanrasset, 420 miles south. We were refused help by the transport garage and curtly ordered by the Prefêt to leave the town before dusk. This we did, but not without some misgivings as all my efforts to try and manufacture fan blades from an old tin were without avail. I cut out some blades with a knife but it was impossible to attach them to the fan. Indeed, it became necessary to break off the two relatively undamaged blades that still remained on one side because their uneven weight was causing the bearings to seize up. We could find no sign of life in the intimidating, desolate waste beyond this miserable town, apart from one tick.

When we reached the edge of the sand, we crossed bare, rocky desert with *jebels* but little vegetation except in one *wadi* and in the formidable Gorge de Arak where there were tall reeds and tamarisk beside a well, and a fort occupied by a few scruffy, but friendly Algerian soldiers. Here there were plenty of Acrididae and other insects and we rested during the heat of the day which, combined with the steep rocky slopes, caused

the engine to boil. Beyond the gorge the country was more attractive, rocky with sand. We saw nomads with camels and a few drops of rain fell. Several grasshoppers came to the lights of our camp during the night. About 40 miles north of Tamanrasset we crossed a great expanse of fine white sand with black *jebels*, scattered *Acacia* trees and clumps of scrub. The only sign of life was a solitary wheatear.

Before In Ekker, an almost deserted military camp and air strip, we were misled by a signpost and took the wrong track. Fortunately we realised this and turned back before we had wasted too much fuel. There were some miles of welcome tarmac, but the time gained on them was more than offset at the end by the enormous delay of having everything searched by the military. At Tamanrasset, a pleasant Tuareg town at the foot of the Hoggar Mountains, we were again stopped and subjected to the intensive searching of all our possessions. As at In Salah, the mud-brick houses here were decorated, a corrugated effect being achieved by wavy lines made with the builders' fingers while the mud plaster was still wet. The next stretch without petrol was 570 miles.

Beyond Tamanrasset, the track became steep and rocky, traversed by *wadis* and long stretches of silvery sand. We saw several gazelles, some of them resting in the shade of overhanging rocks. After 100 miles, we entered a sea of yellow sand, mostly soft but sometimes hard and corrugated, through which projected occasional black *jebels*, almost covered by sand on their windward sides. Not a trace of vegetation could be seen and no animal life. Fortunately a strong wind continued to blow from the south so that our radiator did not boil again. The track was marked by metal beacons and old lorry tyres so that there was no danger of getting lost. A terrific dust cloud in the afternoon caused premature darkness long before sunset. Luckily it was high above our heads so we were able to drive on with headlights. When we camped for the night, a solitary beetle (*Ocnera hispidula* Forsk.) came to the light of the lamp.

All next day there was a strong wind from the south, dust and even a few drops of rain. We travelled across softish sand, at first white but later brown in colour. It was difficult in places to follow the track, which was not always signed and the sand storm of the previous day had largely obliterated old tyre marks. We saw fresh gazelle tracks, however, as well as some flies and other insects. At the Algerian frontier post of In Guezzam there were a couple of *Acacia* trees, a good well, some desiccated camel carcasses and a number of flies. We were kept waiting for an hour before anyone condescended to stamp our passports. At the Niger frontier, a few miles further on, a fat black soldier sprawled asleep on his chair in the shade of a delapidated sentry box. At our appearance a friend rushed up and handed him a rifle, but he continued to doze with it propped between his legs.

The first 200 miles or so through Niger were occupied by soft sand without any sign of life. Many of the beacons had fallen over or were missing, and old tyre marks were still obliterated. Then we began to pull out of absolute desert into Sahel savanna. The ground became firmer and, later, dreadfully corrugated. We passed a well where some Tauregs were watering camels. A number of pied-crows sat aimlessly around. Soon we were in *Acacia* desert-scrub with ostriches, bustards

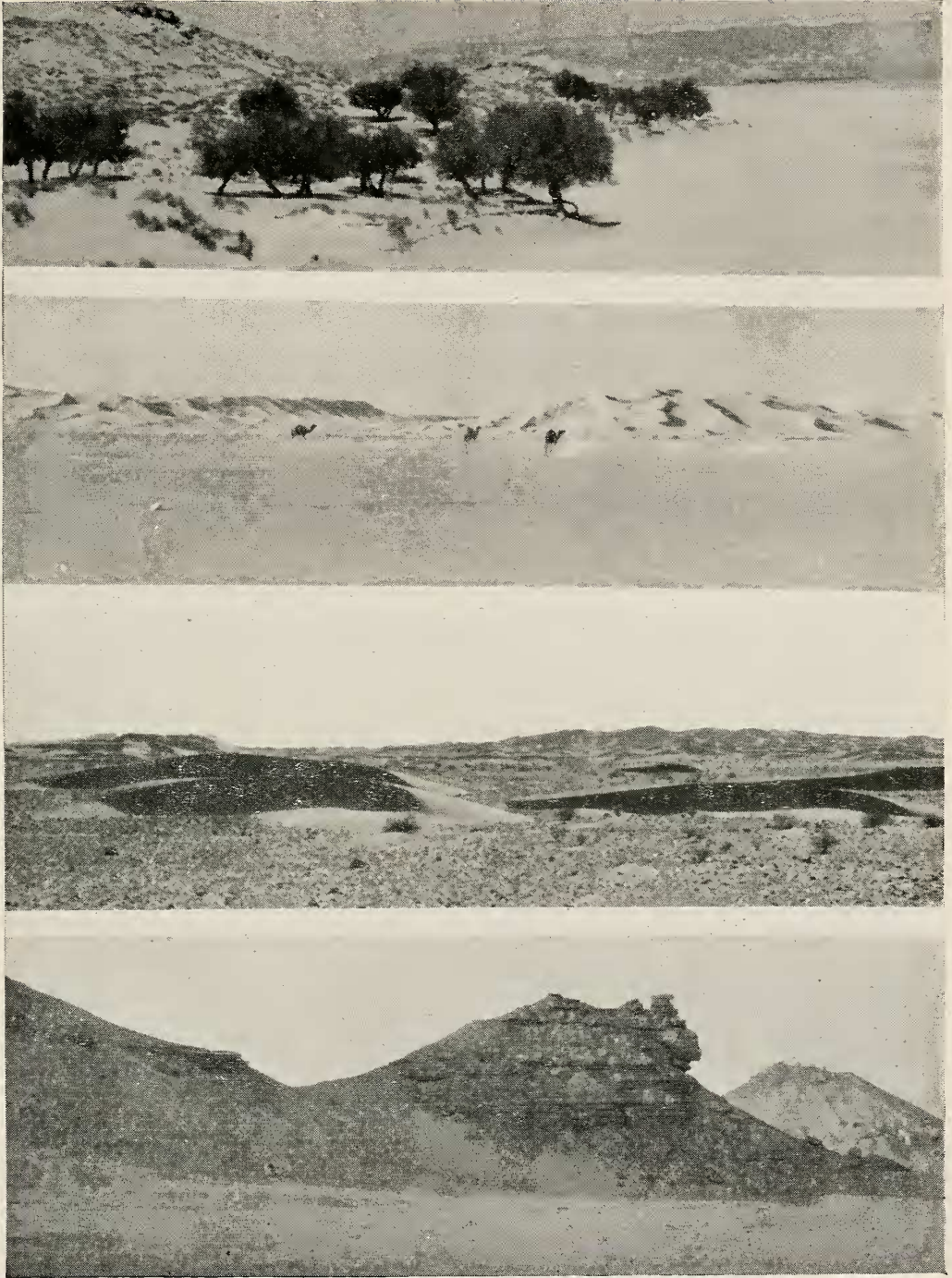


Plate XI, Figs. 1-4: Central Saharan Scenery

From top to bottom: 1—*Acacia* trees at edge of *wadi*; 2—*Erg* (dunes);  
3—*Barchan* dunes; 4—Wind-eroded *jebel*

(Photos: J. L. Cloudsley-Thompson)



and large pale gazelles. In the evening, *Pimelia grandis* Klug, *O. hispida* and some huge camel-spiders (Galeodidae) came to light. Next morning I saw a few termites, muscid flies and Thysanura.

The final run into Agadez was uneventful apart from a fault in the ignition circuit and punctures in both vehicles. The French hotel proprietor changed travellers cheques at an extortionate rate so that we could buy petrol and the immigration officials kept us waiting for six hours during the heat of the day, before stamping our passports. Then we were ordered to leave immediately, which we were only too anxious to do. On the road to Zinder, however, our troubles really started. First, the engine began overheating, so we camped for the night after 72 miles. We were visited after dark by a Tuareg nomad, very picturesque in black veil, coloured robes and hefty sword. He gave us a bowl of milk which was much appreciated. Next morning one of our three 2-stroke cylinder was not firing and we crawled at a rate of 6 m.p.h. into the village of Tanout, where a kindly Nigerian sold us 14 gallons of petrol for £7 sterling—enough to get us to Zinder. Here we found a Hausa mechanic and wasted two more days whilst he worked vainly on our wretched D.K.W. At length, in despair, we limped over the Nigerian border to be welcomed by a most charming Hausa immigration officer. Northern Nigeria where the Sudan savanna belt begins had had considerable rain since the end of May; there were large pools beside the road and all the hollows were green. About 80 miles north of Kano we began to see many hornbills. Striped millipedes (*Oxydesmus* sp.), columns of huge ponerine ants, 2.5 cm. long, which stridulated when disturbed, and giant red velvet mites (*Dinothrombium tinctorium* (L.)). Many insects came to our camp at night.

At Kano our car was completely stripped, rebored, new pistons fitted, distributor and dynamo overhauled and a new fan installed. The engineer, Solomon Ade Telle Ogundipe and his assistants stopped at nothing to make our stay a pleasant one while we camped in their garage. Solomon lent us his car to visit Kano market and the old town with its fascinating architecture of mud brick surmounted by innumerable spikes and other decorations. In the evenings he took us to the high-life clubs where we consumed immense quantities of excellent beer. After four days the engine had been run in and we set off for Maiduguri across wooded savanna with occasional *tebaldi* (baobab) trees and palms. Most of the land was cultivated and we passed herds of long-horned cattle. Many road-blocks had been set up on account of the war with the Eastern Region, but the police and soldiers manning them were invariably courteous and pleasant. In places where the bush was regenerating over areas of old cultivation, the ground was strewn with the long white trumpet-like flowers of lillies. Abdim storks, egrets, vultures and pied-crows were common. On 8th July we passed a swarm of white butterflies stretching from 40 to 25 miles west of Potiskum with stragglers for several more miles. Then the engine began "missing" again.

At Maiduguri we encountered heavy rain. Giant spirostreptid millipedes wandered about at dusk—one even wriggled into my sleeping-bag—and we were beset with mosquitoes. Next morning we crawled through heavy mud on two cylinders, with oil leaking again from the air-filter. We passed reed-buck, oribi, warthog, grivet monkeys and guinea fowl